The Use of Energetic Means to Provoke Undesired Detonation of Explosive Torpedo Warheads Within Targeted Ships Using Teams of Miniature Stealthy Drone Submarines Equipped with Soliton Emitters

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Simon Edwards
Research Acceleration Initiative

Introduction

Plausibly deniable sabotage methods; particularly against submarines; are increasingly in-demand as the provocation of apparent "accidents" aboard reconnaissance, fast-attack and strategic missile submarines affords an opportunity to attrite enemy submarine fleets and to convince adversaries to keep greater distance from territorial waters than is technically required under International Law.

Abstract

Soliton waves, which have application in enhancing the volatility of explosive reactions, may logically also have naval warfare applicability in inciting detonations. While individual and repeated soliton waves can create currents of liberated protons which support combustion after combustion is already underway, multiple convergent soliton waves could be used to directly liberate (subsequent to liberation of electrons) protons in microscopic regions, resulting in the initiation of combustion via purely energetic means and the undesired detonation of high explosives within environments believed to be impervious to sabotage from ranges of up to 100 yards.

While firing upon an adversary nation's submarine using conventional means would generate a great deal of "noise" and would likely result in that submarine signalling distress just prior to its destruction, the aforementioned energetic approach would afford an enemy no warning that an attack was underway.

Energetic instigation of ordnance detonation would leave no physical or chemical signature and would convincingly create the illusion of human error in either the manufacture or handling of munitions by the adversary nation.

High explosives within naval torpedoes are electrically detonated, meaning that flowing electrons are needed to provoke detonation. As with most modern high-explosives, these explosives are "stable" by design and in some cases, can be directly exposed to high heat and even direct flame and not chain-react. While this is sufficient to guard against many possible scenarios in which accidental detonation may occur, it certainly does not create an absolute guarantee against accidental detonation. Unintended detonation is a plausible happenstance as detonators may short as a result of water damage or high explosives may be "cut" purposefully by manufacturers looking to save money. They may also be unintentionally cross-contaminated by other compounds produced in the same

facilities, making supposedly stable warheads vulnerable to heat-induced detonation.

Given that the needed ingredient to provoke such a detonation are sufficient numbers of electrons, the atoms comprising the explosives, themselves, provide all of the electrical potential needed to perform this feat.

Powerful soliton waves are capable of altering the balance of electrons within electron clouds and even stripping electrons from orbitals and absorbing them into the overall wall of energy which constitutes a soliton wave. If multiple soliton waves were to converge upon a single point sc. in the torpedo room of an adversary submarine, the result would be that large numbers of electrons would be liberated from electron orbitals within the high explosive materials themselves and that these electrons would be sufficient to break the chemical bonds which stabilize high explosives contained therein (no different than an electrical arc introduced through a wire.) The result would be a remotely-triggered, energetically-enabled sabotage resulting in the instantaneous destruction of the adversary's vessel with no signature attributable to a specific attacker and no advanced telegraphy of the attack.

This proposed scheme may be achieved via the deployment of teams of four miniature drone submarines outfitted with soliton emitters on the port, starboard, dorsal and ventral faces of the drones with the drones being made to pull up alongside the targeted submarine on all sides excepting fore and aft. Given that the location of the torpedo rooms within adversary submarines is known and given the ability to assess the position of adversary submarines from orbital platforms (ironically, a capability also enabled by soliton waves) drone submarines could make their approach undetected and could emit a single, high-powered pulse from four directions (port, starboard, dorsal and ventral) and then quietly egress from the area after the destruction of the adversary submarine is achieved.

Conclusion

A unique window in which this sort of gray-zone attrition of highly valuable and difficult-to-replace strategic platforms may be carried out ought to be exploited before adversaries become aware of the true state of the art concerning orbital submarine detection as well as soliton-triggered combustion. At that juncture, it is likely that adversaries will begin outfitting submarines with optical systems to actively assess the presence of sabotage drones in proximities of under about 100 yards. At that point, this approach would cease to be plausibly deniable as detection would be certain and a distress call prior to successful sabotage would be likely.

It should be noted that such optical emitters are already being utilized for transiently heating seawater in support of hydrothermal lensing of passive sonar signals in modern passive sonar systems which require that lensed sound only be audible for fractions of a second given the availability of computer-driven

sonalysis. They would merely need to be slightly modified for the application of near-object detection to guard against close-range sabotage. This would be another area in which helicization of light would be highly useful as helical light could cut through water at substantial range in support of undersea LiDAR systems.